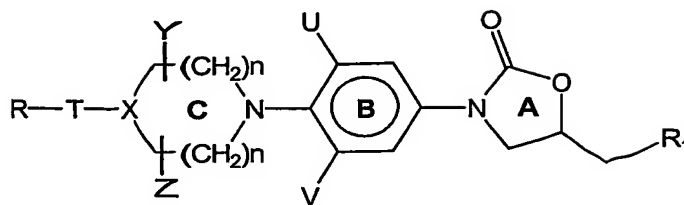


**We Claim:**

1. A compound having the structure of Formula I:

**FORMULA I**

and its pharmaceutically acceptable salts, solvates, polymorphs, enantiomers, diastereomers, N-oxides, prodrugs or metabolites, wherein

T is five membered (un)substituted heterocyclic ring with exclusively one heteroatom, selected from oxygen, nitrogen and sulphur; aryl, substituted aryl, bound to the ring C including aryl and five membered heteroaryl which are further substituted by a group represented by R, wherein R is selected from the group consisting of H, CHO, C<sub>1-6</sub> alkyl, F, Cl, Br, I, -CN, COR<sub>5</sub>, COOR<sub>5</sub>, N(R<sub>6</sub>, R<sub>7</sub>), NHCOC(R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub>), NHCOR<sub>10</sub>, CON(R<sub>6</sub>, R<sub>7</sub>), CH<sub>2</sub>NO<sub>2</sub>, NO<sub>2</sub>, CH(OAc)<sub>2</sub>, CH<sub>2</sub>R<sub>8</sub>, CHR<sub>9</sub>, -CH = N-OR<sub>10</sub>, -C=CH-R<sub>5</sub>, OR<sub>5</sub>, SR<sub>5</sub>, -C(R<sub>9</sub>)=C(R<sub>9</sub>)NO<sub>2</sub>, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>4</sub>, SR<sub>4</sub>; wherein R<sub>4</sub> and R<sub>5</sub> are independently selected from H, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl substituted with one or more of F, Cl, Br, I or OH, aryl, heteroaryl; R<sub>6</sub> and R<sub>7</sub> are independently selected from H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy; R<sub>8</sub> and R<sub>9</sub> are independently selected from H, C<sub>1-6</sub> alkyl, F, Cl, Br, I, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>6</sub>, R<sub>7</sub>); R<sub>10</sub> = H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl;

n is an integer in the range from 0 to 3;

X is C, CH, CH-S, CH-O, N, CHNR<sub>11</sub>, CHCH<sub>2</sub>NR<sub>11</sub>, CCH<sub>2</sub>NR<sub>11</sub>, wherein R<sub>11</sub> is hydrogen, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkylcarbonyl, C<sub>1-6</sub> alkylcarboxy, aryl, heteroaryl;

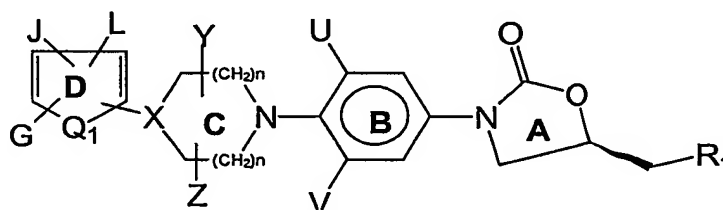
**Y and Z** are independently selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>3-12</sub> and cycloalkyl C<sub>0-3</sub> bridging groups;

**U and V** are independently selected from hydrogen, optionally substituted C<sub>1-6</sub> alkyl, F, Cl, Br, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, preferably  
 5 U and V are hydrogen or fluoro;

**R<sub>1</sub>** is selected from the group consisting of -NHC(=O)R<sub>2</sub>, N(R<sub>3</sub>, R<sub>4</sub>), -NR<sub>2</sub>C(=S)R<sub>3</sub>,

-NR<sub>2</sub>C(=S)SR<sub>3</sub>, wherein R<sub>2</sub> is hydrogen, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl substituted with one or more of F, Cl, Br, I or OH; R<sub>3</sub>, R<sub>4</sub> are  
 10 independently selected from hydrogen, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl substituted with one or more of F, Cl, Br, I or OH.

2. A compound having the structure of Formula II:



**FORMULA - II**

and its pharmaceutically acceptable salts, solvates, polymorphs, enantiomers, diastereomers, N-oxides, prodrugs, or metabolites, wherein

**R<sub>1</sub>** is selected from the group consisting of (1) -NHC(=O)R<sub>2</sub>; (2) -N(R<sub>3</sub>, R<sub>4</sub>); (3) -NR<sub>2</sub>C(=S)R<sub>3</sub>; (4) -NR<sub>2</sub>C(=S)SR<sub>3</sub> wherein R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> are independently hydrogen,  
 10 C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl substituted one or more of F, Cl, Br, I, OH;

**U and V** are independently selected from hydrogen, optionally substituted C<sub>1-6</sub> alkyl, F, Cl, Br, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I;

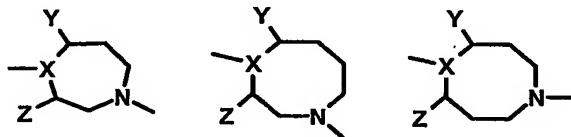
**Y and Z** are independently selected from (1) hydrogen, (2) C<sub>1-6</sub> alkyl, (3) C<sub>3-12</sub> cycloalkyl (4) C<sub>0-3</sub> bridging group.

**X** is selected from C, CH, CH-S, CH-O, N, CHNR<sub>11</sub>, CHCH<sub>2</sub>NR<sub>11</sub>, CCH<sub>2</sub>NR<sub>11</sub>; wherein R<sub>11</sub> is hydrogen, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkylcarbonyl, C<sub>1-6</sub> alkylcarboxy, aryl, heteroaryl;

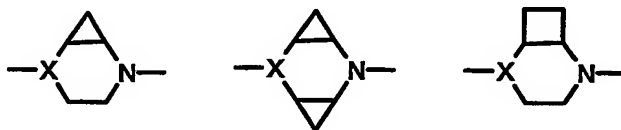
**Q<sub>1</sub>** is selected from O, S, NR<sub>11</sub>, wherein R<sub>11</sub> is as defined above;

**G, J, L** are independently selected from H, C<sub>1-6</sub> alkyl, F, Cl, Br, I, -CN, -CHO, COR<sub>5</sub>, COOR<sub>5</sub>, CH(OAc)<sub>2</sub>, N(R<sub>6</sub>, R<sub>7</sub>), NHCOC(R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub>), CON(R<sub>6</sub>, R<sub>7</sub>), NHCOOR<sub>10</sub>, CH<sub>2</sub>NO<sub>2</sub>, NO<sub>2</sub>, CH<sub>2</sub>R<sub>8</sub>, CHR<sub>9</sub>, -CH = N-OR<sub>10</sub>, -C=CH-R<sub>5</sub>, OR<sub>5</sub>, SR<sub>5</sub>, -C(R<sub>9</sub>)=C(R<sub>9</sub>)NO<sub>2</sub>, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>4</sub>, SR<sub>4</sub>; wherein R<sub>5</sub> is selected from H, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl substituted with one or more of F, Cl, Br, I or OH, aryl, heteroaryl; R<sub>6</sub> and R<sub>7</sub>, are independently selected from H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy; R<sub>8</sub> and R<sub>9</sub> are independently selected from H, C<sub>1-6</sub> alkyl, F, Cl, Br, I, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>6</sub>, R<sub>7</sub>); R<sub>10</sub> = H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl.

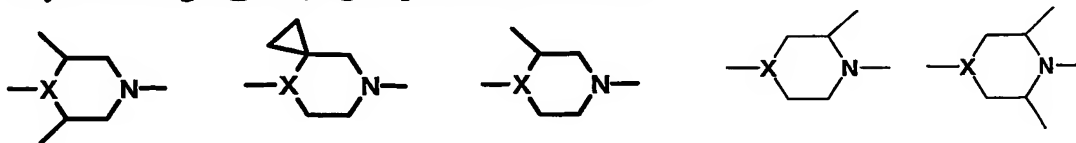
3. The compound according to claim 2 wherein in Formula II, ring C is 6-8 membered in size or of larger size and the larger rings have either two or three carbons between each nitrogen atom, comprising of:



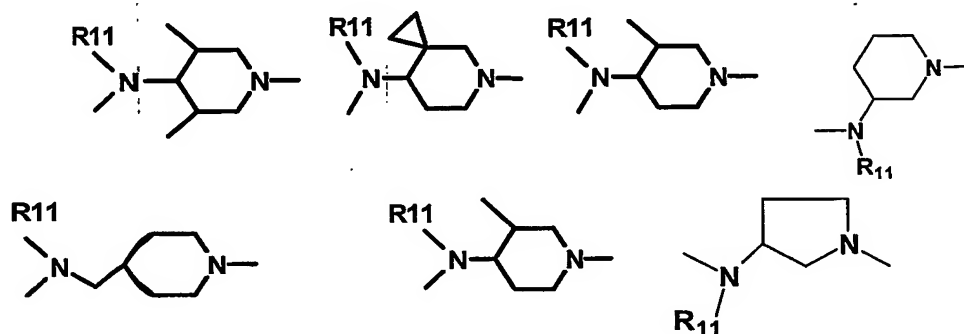
and may be bridged to form a bicyclic system as shown below,



ring C optionally substituted at positions Y and Z with alkyl groups, cycloalkyl groups, fluoro group, carboxylic and corresponding esters, amides, substituted alkyls or bridging alkyl groups as shown below:



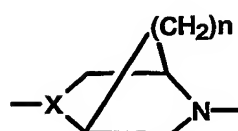
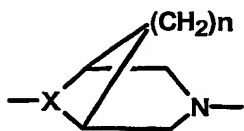
or ring C is 6 membered in size and X is  $-\text{CH}-(\text{NHR}_{11})$ , or  $>\text{CCH}_2\text{NHR}_{11}$  which is selected from the group consisting of the following rings wherein  $\text{R}_{11}$  is the same as defined earlier,



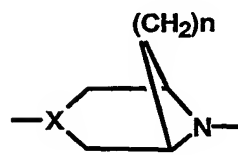
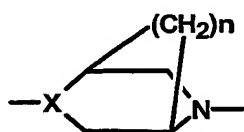
or

in addition to the above, ring C includes the following structures:

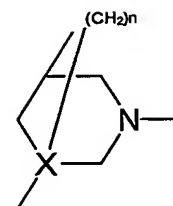
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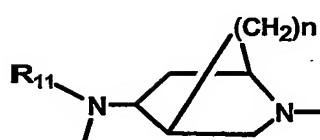
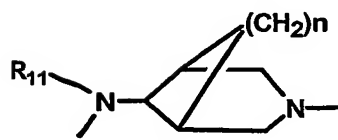
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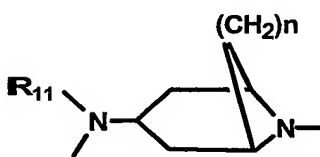
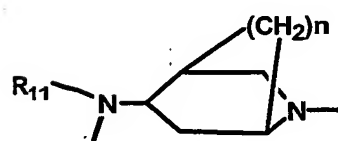
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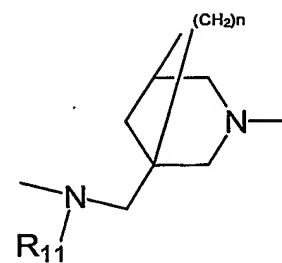
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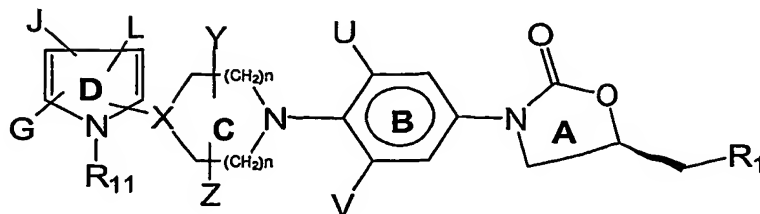
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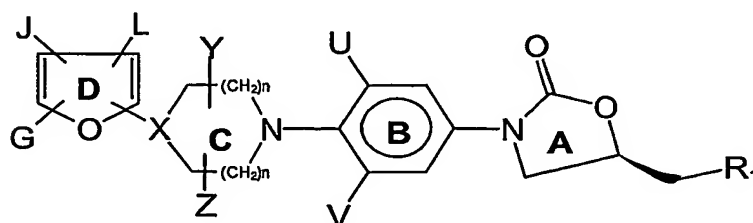
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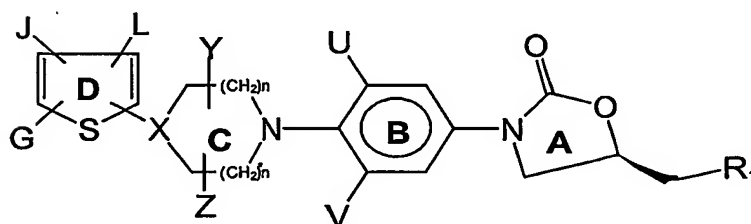
when  $Q_1 = \text{NR}_{11}$ , O or S, the structures are represented by Formulae III, IV and V, respectively,



FORMULA III



FORMULA IV



FORMULA V

wherein  $R_1$ ,  $R_{11}$ , U, V, X, Y, Z, G, J, L and n in Formula III, Formula IV and Formula V are the same as defined earlier for Formula II.

4. A compound selected from the group consisting of

(S)-N-[[3-[3-Fluoro-4-[4-(5-nitro-2-thienyl)-1-piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide (Compound No.1)

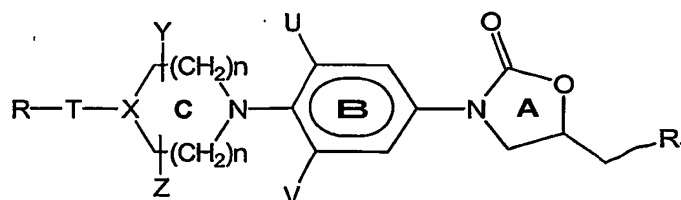
(S)-N-[[3-[3-Fluoro-4-[4-(5-formyl-2-thienyl)-1-piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide (Compound No.2)

(S)-N-[[3-[3-Fluoro-4-[4-(5-formyl-2-furyl)-1-piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide (Compound No. 3)

- (S)-N-[[3-[3-Fluoro-4-[4-(5-nitro-2-furyl)-1-piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide (Compound No. 4)
- (S)-N-[[3-[3-Fluoro-4-[4-{3-thienyl(2-nitro)-5-acetyloxy}methylacetate]-1-piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]acetamide (Compound No. 5)
- (S)-N-[[3-[4-[N-1-(5-nitro-2-thienyl)piperazinyl]-phenyl]-2-oxo-5-oxazolidinyl]-methyl]-acetamide (Compound No. 6)
- (S)-N-[[3-[3-Fluoro-4-[N-1-{4-(5-nitro-2-thienyl)piperazinyl}]-phenyl]-2-oxo-5-oxazolidinyl]-methyl]-2-chloro-propionamide (Compound No. 7)
- (S)-N-[[3-[3-Fluoro-4-[4-(5-nitro-2-thienyl)-1-piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]difluoroacetamide (Compound No. 8)
- (S)-N-[[3-[3-Fluoro-4-[N-1-(5-nitro-2-thienyl)piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]dichloro acetamide (Compound No. 9)
- (S)-N-[[3-[3-Fluoro-4-[(5-nitro-2-thienyl)-3-methyl-1-piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide (Compound No. 10)
- (S)-N-[[3-[3-Fluoro-4-[4-(5-nitro-2-thienyl)-1-piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]fluoroacetamide (Compound No. 11)
- (S)-N-[[3-[3-Fluoro-4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-[6-{N-(5-nitro-2-thienyl)-N-methyl}aminomethyl]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide (Compound No. 12).
- (S)-N-[[3-[3-Fluoro-4-[4-(5-nitro-2-thienyl)-1-homopiperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl] acetamide (Compound No.13)
- (S)-N-[[3-[3-Fluoro-4-[4-(5-nitro-2-furyl)-1-homopiperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl] acetamide (Compound No.14)
- (S)-N-[[3-[3-Fluoro-4-[4-{3-thienyl(2-nitro)5-formyl}-1-piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]-methyl]acetamide (Compound No.15)
- (S)-N-[[3-[3-Fluoro-4-[N-1-[4-{N-methyl-N-(5-nitro-2-furyl)} amino]-1-piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide (Compound No.16)
- (S)-N-[[3-[3-Fluoro-4-[3-(1 $\alpha$ , 5 $\alpha$ , 6 $\alpha$ )-[6-{N-(5-nitro-2-furyl)-N-methyl}aminomethyl]-3-azabicyclo [3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide (Compound No.17)

5. A pharmaceutical composition comprising the compound of claims 1, 2, 3 or 4 and a pharmaceutical acceptable carrier.

6. A pharmaceutical composition comprising a pharmaceutically effective amount of compound according to claims 1, 2, 3 or 4, or a physiologically acceptable acid addition salt thereof with a pharmaceutical acceptable carrier for treating microbial infections.
7. A method of treating or preventing microbial infections in a mammal comprising administering to said mammal, the pharmaceutical composition according to claim 6.
8. The method according to claim 7 wherein the microbial infections are caused by gram-positive and gram-negative bacteria.
9. The method according to claim 8 wherein the gram-positive bacteria are selected from the group consisting of staphylococcus spp., streptococcus spp., bacillus spp., corynebacterium spp., clostridia spp., peptostreptococcus spp., listeria spp. and legionella spp.
10. A method of treating or preventing aerobic and anaerobic bacterial infections in a mammal comprising administering to said mammal, a therapeutically effective amount of a compound having the structure of Formula I



**FORMULA I**

and its pharmaceutically acceptable salts, solvates, polymorphs, enantiomers, diastereomers, N-oxides, prodrugs or metabolites, wherein

T is five membered (un)substituted heterocyclic ring with exclusively one heteroatom, selected from oxygen, nitrogen and sulphur; aryl, substituted aryl, bound to the ring C including aryl and five membered hetero aryl which are further substituted by a group represented by R, wherein R is selected from the group consisting of H, CHO, C<sub>1-6</sub> alkyl, F, Cl, Br, I, -CN, COR<sub>5</sub>, COOR<sub>5</sub>, N(R<sub>6</sub>, R<sub>7</sub>), NHCOC(R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub>), NHCOOR<sub>10</sub>, CON(R<sub>6</sub>, R<sub>7</sub>), CH<sub>2</sub>NO<sub>2</sub>, NO<sub>2</sub>, CH(OAc)<sub>2</sub>,



$\text{CH}_2\text{R}_8$ ,  $\text{CHR}_9$ ,  $-\text{CH} = \text{N}-\text{OR}_{10}$ ,  $-\text{C}=\text{CH}-\text{R}_5$ ,  $\text{OR}_5$ ,  $\text{SR}_5$ ,  $-\text{C}(\text{R}_9)=\text{C}(\text{R}_9)\text{NO}_2$ ,  $\text{C}_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I,  $\text{OR}_4$ ,  $\text{SR}_4$ ; wherein  $\text{R}_4$  and  $\text{R}_5$  are independently selected from H,  $\text{C}_{1-12}$  alkyl,  $\text{C}_{3-12}$  cycloalkyl,  $\text{C}_{1-6}$  alkoxy,  $\text{C}_{1-6}$  alkyl substituted with one or more of F, Cl, Br, I or OH, aryl, heteroaryl;  $\text{R}_6$  and  $\text{R}_7$ , are independently selected from H, optionally substituted  $\text{C}_{1-12}$  alkyl,  $\text{C}_{3-12}$  cycloalkyl,  $\text{C}_{1-6}$  alkoxy;  $\text{R}_8$  and  $\text{R}_9$  are independently selected from H,  $\text{C}_{1-6}$  alkyl, F, Cl, Br, I,  $\text{C}_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I,  $\text{OR}_5$ ,  $\text{SR}_5$ ,  $\text{N}(\text{R}_6, \text{R}_7)$ ;  $\text{R}_{10} = \text{H}$ , optionally substituted  $\text{C}_{1-12}$  alkyl,  $\text{C}_{3-12}$  cycloalkyl,  $\text{C}_{1-6}$  alkoxy,  $\text{C}_{1-6}$  alkyl, aryl, heteroaryl;

$n$  is an integer in the range from 0 to 3;

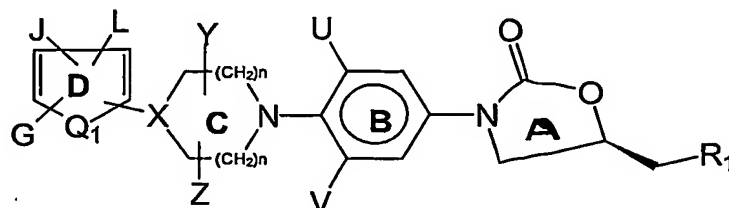
$\text{X}$  is C, CH, CH-S, CH-O, N,  $\text{CHNR}_{11}$ ,  $\text{CHCH}_2\text{NR}_{11}$ ,  $\text{CCH}_2\text{NR}_{11}$ , wherein  $\text{R}_{11}$  is hydrogen, optionally substituted  $\text{C}_{1-12}$  alkyl,  $\text{C}_{3-12}$  cycloalkyl,  $\text{C}_{1-6}$  alkoxy,  $\text{C}_{1-6}$  alkyl,  $\text{C}_{1-6}$  alkylcarbonyl,  $\text{C}_{1-6}$  alkylcarboxy, aryl, heteroaryl;

$\text{Y}$  and  $\text{Z}$  are independently selected from hydrogen,  $\text{C}_{1-6}$  alkyl,  $\text{C}_{3-12}$  and cycloalkyl  $\text{C}_{0-3}$  bridging groups;

$\text{U}$  and  $\text{V}$  are independently selected from hydrogen, optionally substituted  $\text{C}_{1-6}$  alkyl, F, Cl, Br,  $\text{C}_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I, preferably  $\text{U}$  and  $\text{V}$  are hydrogen or fluoro;

$\text{R}_1$  is selected from the group consisting of  $-\text{NHC}(=\text{O})\text{R}_2$ ,  $\text{N}(\text{R}_3, \text{R}_4)$ ,  $-\text{NR}_2\text{C}(=\text{S})\text{R}_3$ ,  $-\text{NR}_2\text{C}(=\text{S})\text{SR}_3$ , wherein  $\text{R}_2$  is hydrogen,  $\text{C}_{1-12}$  alkyl,  $\text{C}_{3-12}$  cycloalkyl,  $\text{C}_{1-6}$  alkoxy,  $\text{C}_{1-6}$  alkyl substituted with one or more of F, Cl, Br, I or OH;  $\text{R}_3, \text{R}_4$  are independently selected from hydrogen,  $\text{C}_{1-12}$  alkyl,  $\text{C}_{3-12}$  cycloalkyl,  $\text{C}_{1-6}$  alkoxy,  $\text{C}_{1-6}$  alkyl substituted with one or more of F, Cl, Br, I or OH.

11. A method of treating or preventing aerobic and anaerobic bacterial infections in a mammal comprising administering to said mammal, a therapeutically effective amount of a compound having the structure of Formula II:



FORMULA - II

and its pharmaceutically acceptable salts, solvates, polymorphs, enantiomers, diastereomers, N-oxides, prodrugs or metabolites, wherein

$R_1$  is selected from the group consisting of (1)  $-NHC(=O)R_2$ ; (2)  $-N(R_3, R_4)$ ; (3)  $-NR_2C(=S)R_3$ ; (4)  $-NR_2C(=S)SR_3$  wherein  $R_2, R_3, R_4$  are independently hydrogen,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted one or more of F, Cl, Br, I, OH;

U and V are independently selected from hydrogen, optionally substituted  $C_{1-6}$  alkyl; F, Cl, Br,  $C_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I;

Y and Z are independently selected from (1) hydrogen, (2)  $C_{1-6}$  alkyl, (3)  $C_{3-12}$  cycloalkyl (4)  $C_{0-3}$  bridging group;

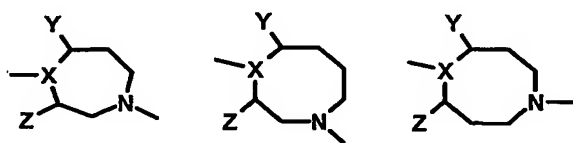
X is selected from C, CH, CH-S, CH-O, N,  $CHNR_{11}$ ,  $CHCH_2NR_{11}$ ,  $CCH_2NR_{11}$ ; wherein  $R_{11}$  is hydrogen, optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl,  $C_{1-6}$  alkylcarbonyl,  $C_{1-6}$  alkylcarboxy, aryl, heteroaryl;

$Q_1$  is selected from O, S,  $NR_{11}$ , wherein  $R_{11}$  is as defined above;

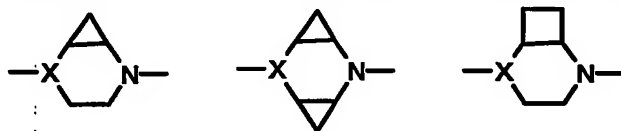
G, J, L are independently selected from H,  $C_{1-6}$  alkyl, F, Cl, Br, I,  $-CN$ ,  $COR_5$ ,  $COOR_5$ ,  $N(R_6, R_7)$ ,  $NHCOC(R_8, R_9, R_{10})$ ,  $CON(R_6, R_7)$ ,  $NHCOOR_{10}$ ,  $CH_2NO_2$ ,  $NO_2$ ,  $CH_2R_8$ ,  $CHR_9$ ,  $-CH=N-OR_{10}$ ,  $-C=CH-R_5$ ,  $OR_5$ ,  $SR_5$ ,  $-C(R_9)=C(R_9)NO_2$ ,  $C_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I,  $OR_4$ ,  $SR_4$ ; wherein  $R_5$  is selected from H,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted with one or more of F, Cl, Br, I or OH, aryl, heteroaryl;  $R_6$

and R<sub>7</sub>, are independently selected from H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy; R<sub>8</sub> and R<sub>9</sub> are independently selected from H, C<sub>1-6</sub> alkyl, F, Cl, Br, I, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>6</sub>, R<sub>7</sub>); R<sub>10</sub> = H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl.

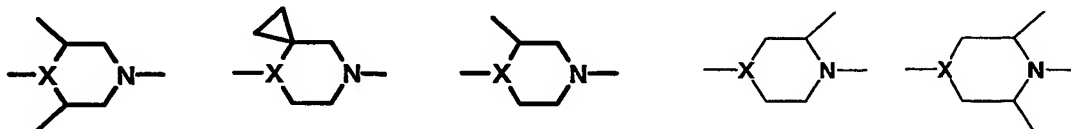
12. The method of treating or preventing aerobic and anaerobic bacterial infections of claim 11, wherein ring C is 6-8 membered in size or of larger size and the larger rings have either two or three carbons between each nitrogen atom, comprising of:



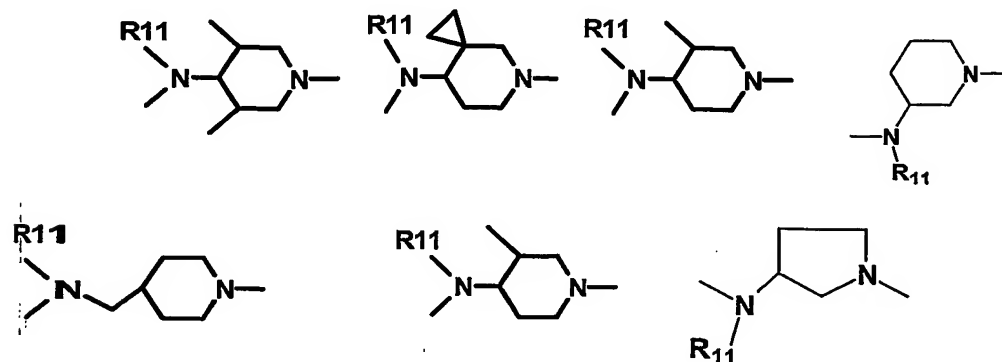
and may be bridged to form a bicyclic system as shown below,



ring C optionally substituted at positions Y and Z with alkyl groups, cycloalkyl groups, fluoro group, carboxylic and corresponding esters, amides, substituted alkyls or bridging alkyl groups as shown below:

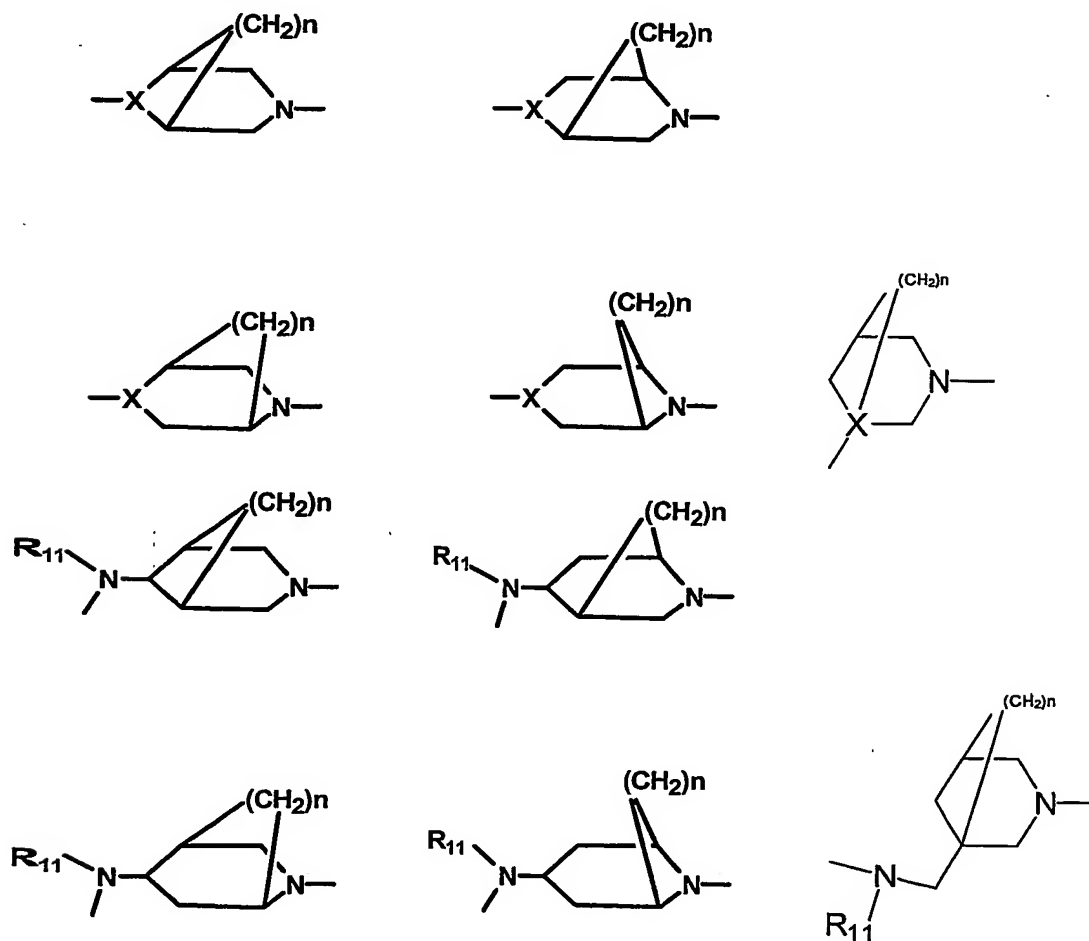


or ring C is 6 membered in size and X is  $-\text{CH}-(\text{NHR}_{11})$ , or  $>\text{CCH}_2\text{NHR}_{11}$ - which is selected from the group consisting of the following rings wherein  $\text{R}_{11}$  is the same as defined earlier,

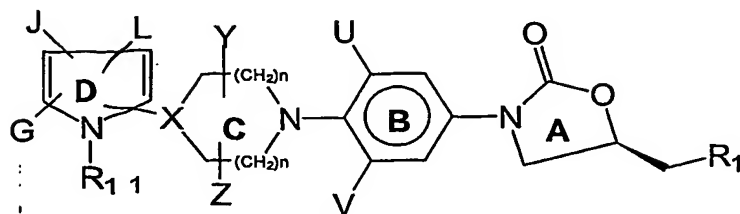


or

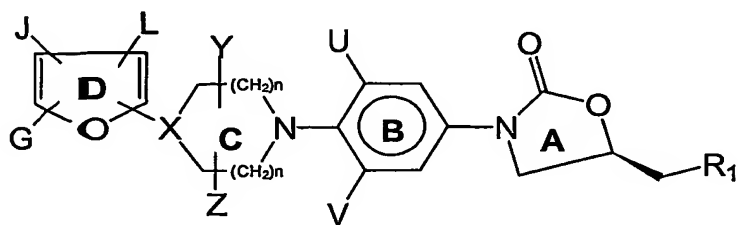
in addition to the above, ring C includes the following structures:



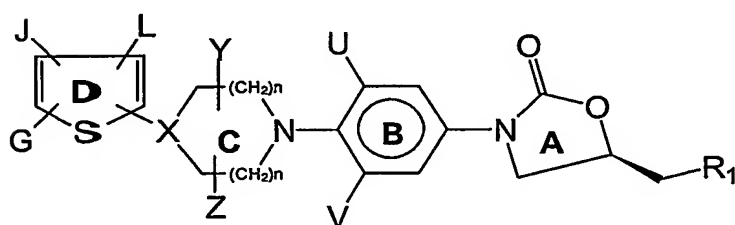
when  $Q_1 = NR_{11}$ , O or S, the structures are represented by Formulae III, IV and V, respectively,



**FORMULA III**



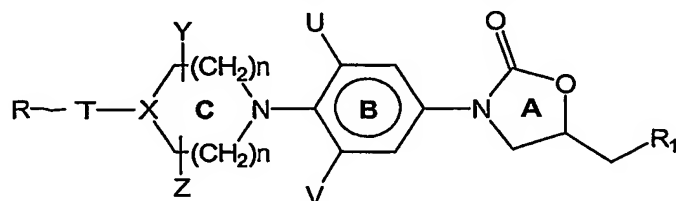
**FORMULA IV**



**FORMULA V**

wherein  $R_1$ ,  $R_{11}$ , U, V, X, Y, Z, G, J, L and n in Formula III, Formula IV and Formula V are the same as defined earlier for Formula II.

13. A method of treating or preventing catheter infections and foreign body or prostheses infections in a mammal comprising administering to said mammal, a therapeutically effective amount of a compound having the structure of Formula I.



**FORMULA I**

and its pharmaceutically acceptable salts, solvates, polymorphs, enantiomers, diastereomers, N-oxides, prodrugs or metabolites, wherein

T is five membered (un)substituted heterocyclic ring with exclusively one heteroatom, selected from oxygen, nitrogen and sulphur; aryl, substituted aryl, bound to the ring C including aryl and five membered heteroaryl which are further substituted by a group represented by  $R_5$ , wherein R is selected from the group consisting of H, CHO,  $C_{1-6}$  alkyl, F, Cl, Br, I,  $-CN$ ,  $COR_5$ ,  $COOR_5$ ,  $N(R_6, R_7)$ ,  $NHCOC(R_8, R_9, R_{10})$ ,  $NHCOOR_{10}$ ,  $CON(R_6, R_7)$ ,  $CH_2NO_2$ ,  $NO_2$ ,  $CH(OAc)_2$ ,  $CH_2R_8$ ,  $CHR_9$ ,  $-CH = N-OR_{10}$ ,  $-C=CH-R_5$ ,  $OR_5$ ,  $SR_5$ ,  $-C(R_9)=C(R_9)NO_2$ ,  $C_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I,  $OR_4$ ,  $SR_4$ ; wherein  $R_4$  and  $R_5$  are independently selected from H,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted with one or more of F, Cl, Br, I or OH, aryl, heteroaryl;  $R_6$  and  $R_7$ , are independently selected from H, optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy;  $R_8$  and  $R_9$  are independently selected from H,  $C_{1-6}$  alkyl, F, Cl, Br, I,  $C_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I,  $OR_5$ ,  $SR_5$ ,  $N(R_6, R_7)$ ;  $R_{10} = H$ , optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl, aryl, heteroaryl;

n is an integer in the range from 0 to 3;

X is C, CH, CH-S, CH-O, N,  $CHNR_{11}$ ,  $CHCH_2NR_{11}$ ,  $CCH_2NR_{11}$ ; wherein  $R_{11}$  is hydrogen, optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl,  $C_{1-6}$  alkylcarbonyl,  $C_{1-6}$  alkylcarboxy, aryl, heteroaryl;

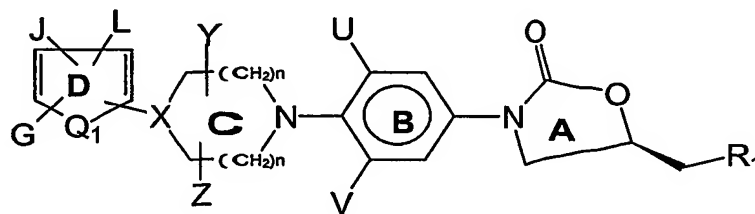
Y and Z are independently selected from hydrogen,  $C_{1-6}$  alkyl,  $C_{3-12}$  and cycloalkyl  $C_{0-3}$  bridging groups;

U and V are independently selected from hydrogen, optionally substituted  $C_{1-6}$  alkyl, F, Cl, Br,  $C_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I, preferably U and V are hydrogen or fluoro;

$R_1$  is selected from the group consisting of  $-NHC(=O)R_2$ ,  $N(R_3, R_4)$ ,  $NR_2C(=S)R_3$ ,  $-NR_2C(=S)SR_3$ , wherein  $R_2$  is hydrogen,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted with one or more of F, Cl, Br, I or

OH;  $R_3, R_4$  are independently selected from hydrogen,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted with one or more of F, Cl, Br, I or OH.

14. A method of treating or preventing catheter infections and foreign body or prosthesis infections in a mammal comprising administering to said mammal, a therapeutically effective amount of a compound having the structure of Formula II:



FORMULA - II

and its pharmaceutically acceptable salts, solvates, polymorphs, enantiomers, diastereomers, N-oxides, prodrugs or metabolites, wherein

$R_1$  is selected from the group consisting of (1)  $-NHC(=O)R_2$ ; (2)  $-N(R_3, R_4)$ ; (3)  $-NR_2C(=S)R_3$ ; (4)  $-NR_2C(=S)SR_3$  wherein  $R_2, R_3, R_4$  are independently hydrogen,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted one or more of F, Cl, Br, I, OH;

U and V are independently selected from hydrogen, optionally substituted  $C_{1-6}$  alkyl, F, Cl, Br,  $C_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I;

Y and Z are independently selected from (1) hydrogen, (2)  $C_{1-6}$  alkyl, (3)  $C_{3-12}$  cycloalkyl (4)  $C_{0-3}$  bridging group;

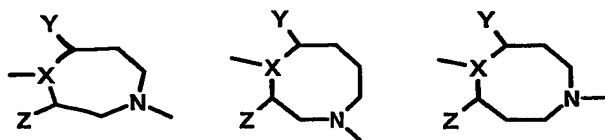
X is selected from C, CH, CH-S, CH-O, N,  $CHNR_{11}$ ,  $CHCH_2NR_{11}$ ,  $CCH_2NR_{11}$ ; wherein  $R_{11}$  is hydrogen, optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl,  $C_{1-6}$  alkylcarbonyl,  $C_{1-6}$  alkylcarboxy, aryl, heteroaryl;

$Q_1$  is selected from O, S,  $NR_{11}$ , wherein  $R_{11}$  is as defined above;

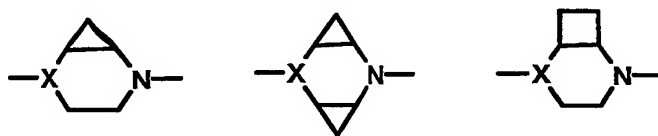
G, J, L are independently selected from H,  $C_{1-6}$  alkyl, F, Cl, Br, I,  $-CN$ ,  $COR_5$ ,  $COOR_5$ ,  $N(R_6, R_7)$ ,  $NHCO(R_8, R_9, R_{10})$ ,  $CON(R_6, R_7)$ ,  $NHCOOR_{10}$ ,

CH<sub>2</sub>NO<sub>2</sub>, NO<sub>2</sub>, CH<sub>2</sub>R<sub>8</sub>, CHR<sub>9</sub>, -CH=N-OR<sub>10</sub>, -C=CH-R<sub>5</sub>, OR<sub>5</sub>, SR<sub>5</sub>, -  
 C(R<sub>9</sub>)=C(R<sub>9</sub>)NO<sub>2</sub>, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>4</sub>,  
 SR<sub>4</sub>; wherein R<sub>5</sub> is selected from H, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub>  
 alkyl substituted with one or more of F, Cl, Br, I or OH, aryl, heteroaryl; R<sub>6</sub> and  
 5 R<sub>7</sub>, are independently selected from H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub>  
 cycloalkyl, C<sub>1-6</sub> alkoxy; R<sub>8</sub> and R<sub>9</sub> are independently selected from H, C<sub>1-6</sub> alkyl,  
 F, Cl, Br, I, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>5</sub>, SR<sub>5</sub>,  
 N(R<sub>6</sub>,R<sub>7</sub>); R<sub>10</sub>= H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy,  
 C<sub>1-6</sub> alkyl, aryl or hetero aryl.

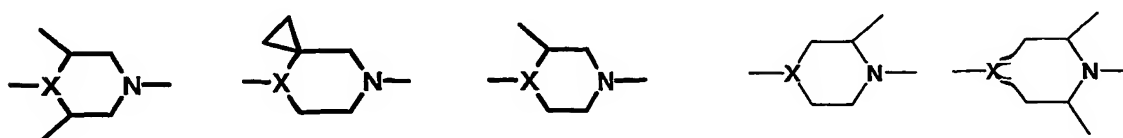
15. A method of treating or preventing catheter infections and foreign body or  
 prosthesis infections in a mammal comprising administering to said mammal, a  
 therapeutically effective amount of a compound having the structure of Formula II  
 as defined in claim 14 wherein ring C is 6-8 membered in size or of larger size  
 and the larger rings have either two or three carbons between each nitrogen atom,  
 5 comprising of:



and may be bridged to form a bicyclic system as shown below,

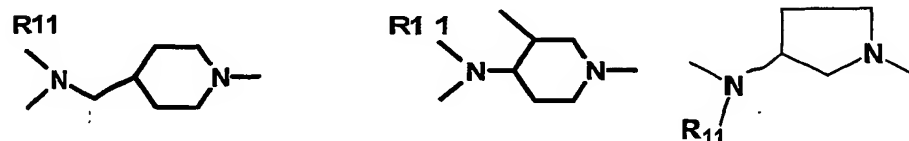
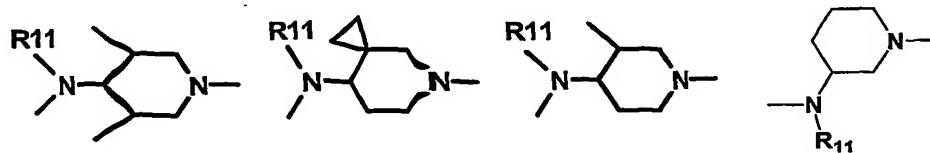


25 ring C optionally substituted at positions Y and Z with alkyl groups, cycloalkyl  
 groups, fluoro group, carboxylic and corresponding esters, amides, substituted  
 alkyls or bridging alkyl groups as shown below:



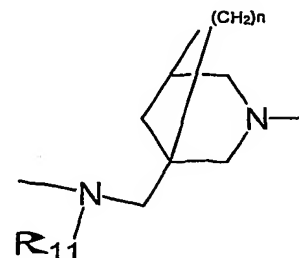
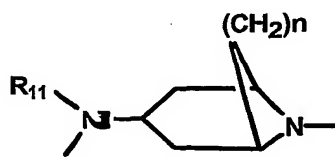
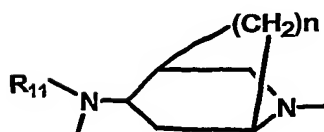
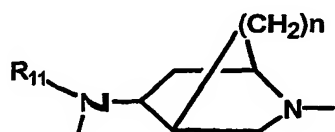
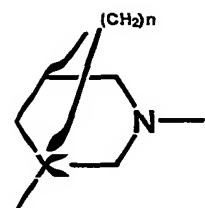
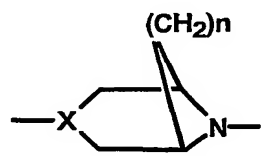
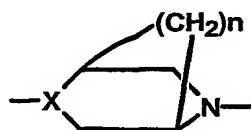
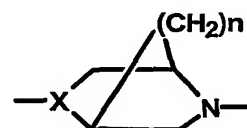


or ring C is 6 membered in size and X is  $-\text{CH}(\text{NHR}_{11})$ , or  $>\text{CCH}_2\text{NHR}_{11}$  which is selected from the group consisting of the following rings wherein  $\text{R}_{11}$  is the same as defined earlier,

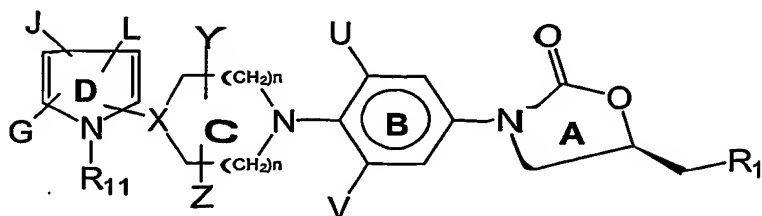


or

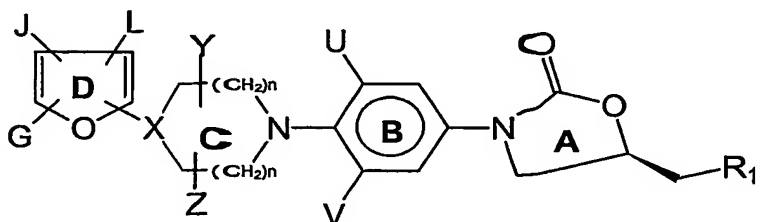
in addition to the above, ring C includes the following structures:



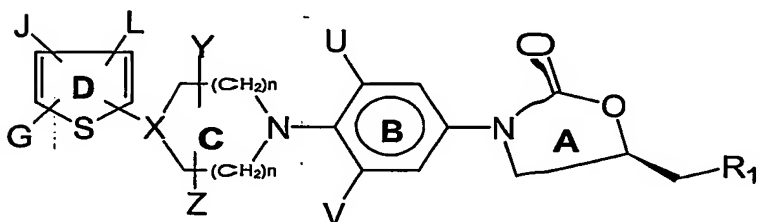
when  $Q_1 = NR_{11}$ , O or S, the structures are represented by Formulae III, IV and V, respectively,



**FORMULA III**



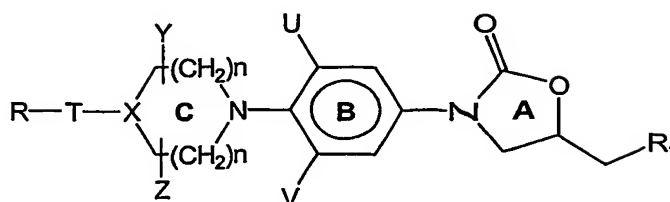
**FORMULA IV**



**FORMULA V**

wherein  $R_1$ ,  $R_{11}$ , U, V, X, Y, Z, G, J, L and n in Formula III, Formula IV and Formula V are the same as defined earlier for Formula II.

## 16. A process for preparing a compound of Formula I



FORMULA I

5 and its pharmaceutically acceptable salts, solvates, polymorphs, enantiomers, diastereomers, N-oxides, prodrugs or metabolites, wherein

T is five membered (un)substituted heterocyclic ring with exclusively one  
 heteroatom, selected from oxygen, nitrogen and sulphur; aryl, substituted aryl,  
 bound to the ring C including aryl and five membered heteroaryl which are further  
 substituted by a group represented by R, wherein R is selected from the group  
 consisting of H, CHO, C<sub>1-6</sub> alkyl, F, Cl, Br, I, -CN, COR<sub>5</sub>, COOR<sub>5</sub>, N(R<sub>6</sub>, R<sub>7</sub>),  
 10 NHCO(R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub>), NHCOOR<sub>10</sub>, CON(R<sub>6</sub>, R<sub>7</sub>), CH<sub>2</sub>NO<sub>2</sub>, NO<sub>2</sub>, CH(OAc)<sub>2</sub>,  
 CH<sub>2</sub>R<sub>8</sub>, CHR<sub>9</sub>, -CH = N-OR<sub>10</sub>, -C=CH-R<sub>5</sub>, OR<sub>5</sub>, SR<sub>5</sub>, -C(R<sub>9</sub>)=C(R<sub>9</sub>)NO<sub>2</sub>, C<sub>1-12</sub>  
 alkyl substituted with one or more of F, Cl, Br, I, OR<sub>4</sub>, SR<sub>4</sub>; wherein R<sub>4</sub> and R<sub>5</sub> are  
 15 independently selected from H, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub>  
 alkyl substituted with one or more of F, Cl, Br, I or OH, aryl, heteroaryl; R<sub>6</sub> and  
 R<sub>7</sub>, are independently selected from H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub>  
 cycloalkyl, C<sub>1-6</sub> alkoxy; R<sub>8</sub> and R<sub>9</sub> are independently selected from H, C<sub>1-6</sub> alkyl,  
 F, Cl, Br, I, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>5</sub>, SR<sub>5</sub>,  
 20 N(R<sub>6</sub>, R<sub>7</sub>); R<sub>10</sub> = H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy,  
 C<sub>1-6</sub> alkyl, aryl, heteroaryl;

n is an integer in the range from 0 to 3;

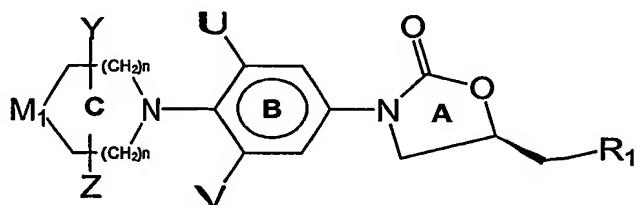
X is C, CH, CH-S, CH-O, N, CHNR<sub>11</sub>, CHCH<sub>2</sub>NR<sub>11</sub>, CCH<sub>2</sub>NR<sub>11</sub>; wherein R<sub>11</sub> is  
 hydrogen, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub>  
 25 alkyl, C<sub>1-6</sub> alkylcarbonyl, C<sub>1-6</sub> alkylcarboxy, aryl, heteroaryl;

Y and Z are independently selected from hydrogen, C<sub>1-6</sub> alkyl, C<sub>3-12</sub> and  
 cycloalkyl C<sub>0-3</sub> bridging groups;

U and V are independently selected from hydrogen, optionally substituted  $C_{1-6}$  alkyl, F, Cl, Br,  $C_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I, preferably U and V are hydrogen or fluoro;

$R_1$  is selected from the group consisting of  $-NHC(=O)R_2$ ,  $N(R_3, R_4)$ ,  $-NR_2C(=S)R_3$ , wherein  $R_2$  is hydrogen,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted with one or more of F, Cl, Br, I or OH;  $R_3, R_4$  are independently selected from hydrogen,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted with one or more of F, Cl, Br, I or OH;

which comprises reacting an amine of Formula VI

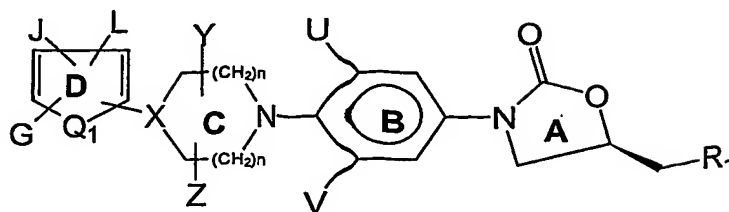


FORMULA VI

with a heteroaromatic compound of Formula R-T- $R_{12}$  wherein T,  $R_1$ , Y, Z, U, V and n are the same as defined earlier and  $M_1$  is selected from the group consisting of NH, NHR, CHNHR,  $-CHCH_2NHR$ ,  $-CCH_2NHR$  wherein R is H, ethyl, methyl, isopropyl, acetyl, cyclopropyl, alkoxy or acetyl and  $R_{12}$  is a suitable leaving group selected from the group consisting of fluoro, chloro, bromo, iodo,  $SCH_3$ ,  $SO_2CH_3$ ,  $-SO_2CF_3$ , Tos and  $OC_6H_5$ .

17. The process of claim 16, wherein the amine of Formula VI reacts with a heteroaromatic compound of Formula R-T- $R_{12}$  in the presence of a base selected from the group consisting of potassium carbonate, N-ethyldiisopropylamine and dipotassium hydrogenphosphate.

18. A process for preparing a compound of Formula II



**FORMULA II**

and its pharmaceutically acceptable salts, solvates, polymorphs, enantiomers, diastereomers, N-oxides, prodrugs or metabolites, wherein

$R_1$  is selected from the group consisting of (1)  $-NHC(=O)R_2$ ; (2)  $-N(R_3, R_4)$ ; (3)  $-NR_2C(=S)R_3$ ; (4)  $-NR_2C(=S)SR_3$  wherein  $R_2, R_3, R_4$  are independently hydrogen,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted one or more of F, Cl, Br, I, OH;

U and V are independently selected from hydrogen, optionally substituted  $C_{1-6}$  alkyl, F, Cl, Br,  $C_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I;

Y and Z are independently selected from (1) hydrogen, (2)  $C_{1-6}$  alkyl, (3)  $C_{3-12}$  cycloalkyl (4)  $C_{0-3}$  bridging group;

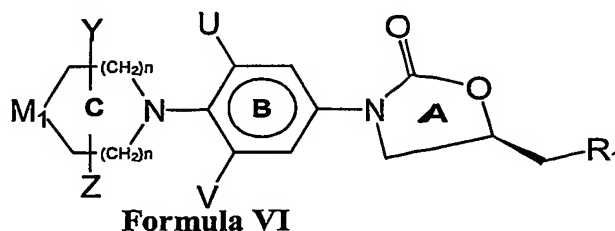
X is selected from C, CH, CH-S, CH-O, N,  $CHNR_{11}$ ,  $CHCH_2NR_{11}$ ,  $CCH_2NR_{11}$ ; wherein  $R_{11}$  is hydrogen, optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl,  $C_{1-6}$  alkylcarbonyl,  $C_{1-6}$  alkylcarboxy, aryl, heteroaryl;

$Q_1$  is selected from O, S,  $NR_{11}$ , wherein  $R_{11}$  is as defined above;

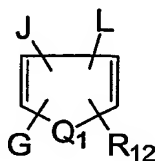
G, J, L are independently selected from H,  $C_{1-6}$  alkyl, F, Cl, Br, I,  $-CN$ ,  $COR_5$ ,  $COOR_5$ ,  $N(R_6, R_7)$ ,  $NHCOC(R_8, R_9, R_{10})$ ,  $CON(R_6, R_7)$ ,  $NHCOOR_{10}$ ,  $CH_2NO_2$ ,  $NO_2$ ,  $CH_2R_8$ ,  $CHR_9$ ,  $-CH=N-OR_{10}$ ,  $-C=CH-R_5$ ,  $OR_5$ ,  $SR_5$ ,  $-C(R_9)=C(R_9)NO_2$ ,  $C_{1-12}$  alkyl substituted with one or more F, Cl, Br, I,  $OR_4$ ,  $SR_4$ ; wherein  $R_5$  is selected from H,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted with one or more of F, Cl, Br, I or OH, aryl, heteroaryl;  $R_6$  and  $R_7$  are independently selected from H, optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy;  $R_8$  and  $R_9$  are independently selected from H,  $C_{1-6}$  alkyl, F, Cl, Br, I,

C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>6</sub>, R<sub>7</sub>); R<sub>10</sub> = H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl;

comprising reacting a compound of Formula VI

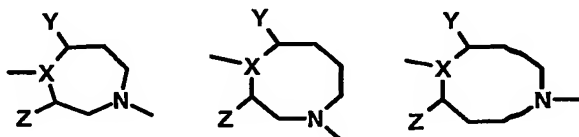


with a heteroaromatic compound of Formula VII

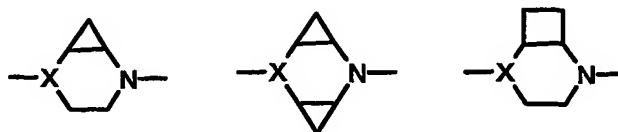


wherein R<sub>1</sub>, Y, Z, U, V, G, J, L, Q<sub>1</sub>, and n are the same as defined earlier and M<sub>1</sub> is selected from the group consisting of NH, NHR, CHNHR, -CHCH<sub>2</sub>NHR, -CCH<sub>2</sub>NHR wherein R is H, ethyl, methyl, isopropyl, acetyl, cyclopropyl, alkoxy or acetyl and R<sub>12</sub> is a suitable leaving group selected from the group consisting of fluoro, chloro, bromo, iodo, SCH<sub>3</sub>, -SO<sub>2</sub>CH<sub>3</sub>, -SO<sub>2</sub>CF<sub>3</sub>, Tos and OC<sub>6</sub>H<sub>5</sub>.

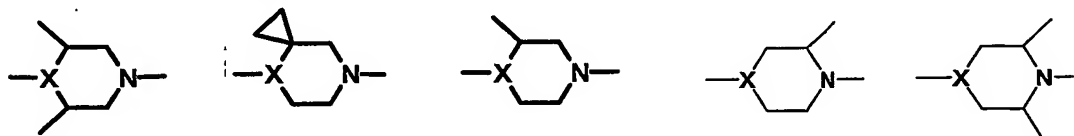
19. The process for preparing a compound of Formula II as described in claim 18 wherein ring C in Formula II is 6-8 membered in size or of larger size and the larger rings have either two or three carbons between each nitrogen atom, comprising of:



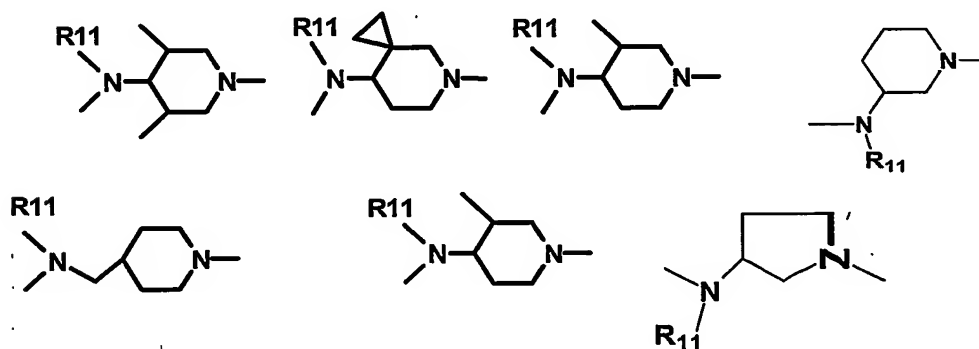
and may be bridged to form a bicyclic system as shown below,



ring C optionally substituted at positions Y and Z with alkyl groups, cycloalkyl groups, fluoro group, carboxylic and corresponding esters, amides, substituted alkyls or bridging alkyl groups as shown below:

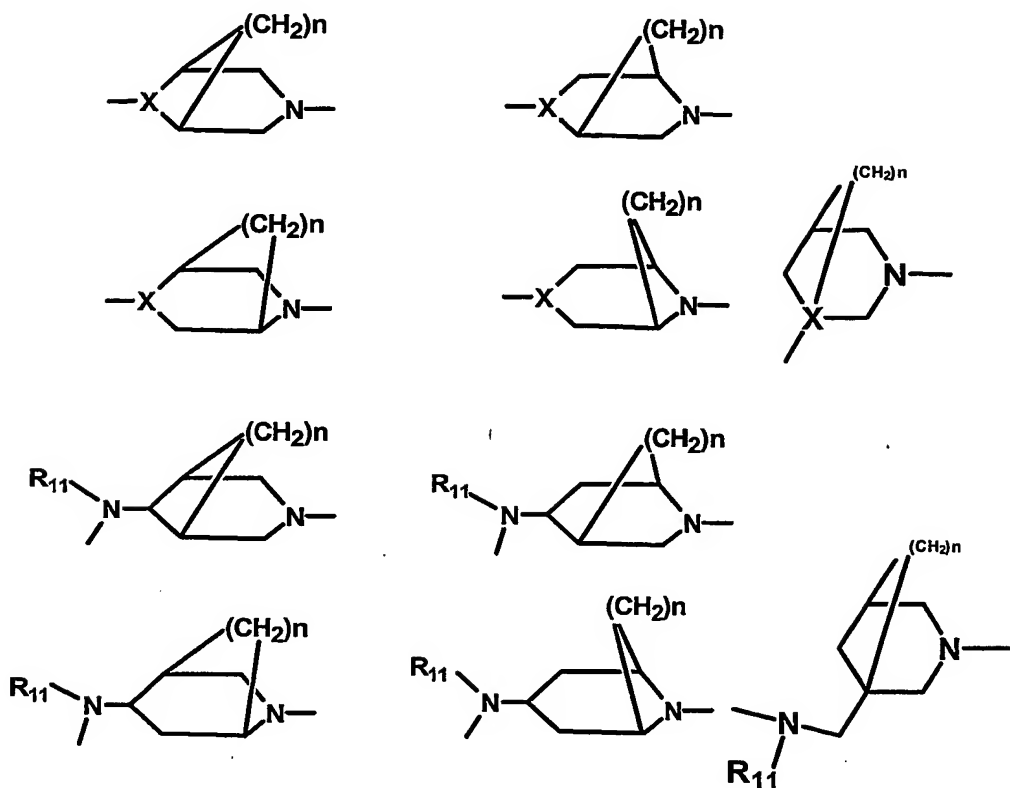


or ring C is 6 membered in size and X is  $-\text{CH}-(\text{NHR}_{11})$ , or  $>\text{CCH}_2\text{NHR}_{11}-$  which is selected from the group consisting of the following rings wherein  $\text{R}_{11}$  is the same as defined earlier,

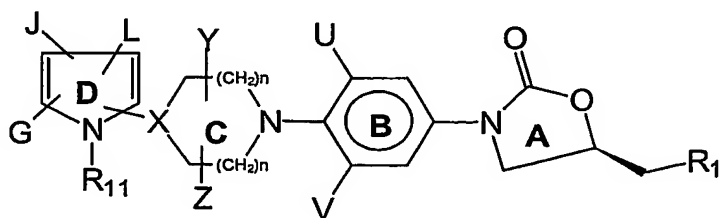


or

in addition to the above, ring C includes the following structures:

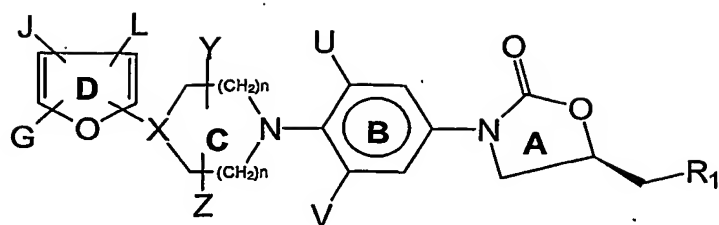


when Q<sub>1</sub>=NR<sub>11</sub>, O or S, the structures are represented by Formulae III, IV and V, respectively,

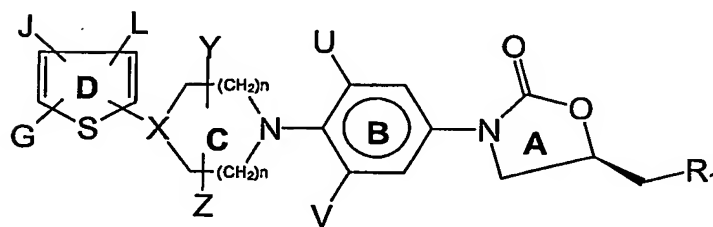


**FORMULA III**





FORMULA IV



FORMULA V

wherein  $R_1$ ,  $R_{11}$ , U, V, X, Y, Z, G, J, L and n in Formula III, Formula IV and Formula V are the same as defined earlier for Formula II.

20. The process of claim 18 wherein the heteroaromatic compound of Formula VII is reacted with the amine of Formula VI in the presence of ligands selected from the group consisting of  $Pd_2(dba)_3$  and  $Pd(OAc)_2$ .
21. The process of claim 18 wherein the heteroaromatic compound of Formula VII is 2-bromothiophene.
22. The process of claim 18 wherein the reaction of compound of Formula VI with a compound of Formula VII is carried out in the presence of a solvent wherein the solvent is selected from the group consisting of dimethylformamide, dimethylacetamide, acetonitrile, dimethylsulfoxide and ethylene glycol.
23. The process of claim 18 wherein the reaction of compound of Formula VI with a compound of Formula VII is carried out in the presence of a suitable base wherein the base is selected from the group consisting of triethylamine diisopropylethylamine, potassium carbonate, sodium carbonate and dipotassium hydrogen phosphate.